

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

WILLARS et al.

Atty. Ref.: 2380-122

Serial No. 09/286,471

TC/A.U.: 2681

Filed: April 6, 1999

Examiner: Not Yet Assigned

For: INTER-SYSTEM HANDOVER --
GENERIC HANDOVER MECHANISM

* * * * *

May 22, 2006

MAIL STOP PETITIONS

Commissioner for Patents

Attention: **Beth Anne Bayoan**

P.O. Box 1450

Alexandria, VA 22313-1450

RECEIVED
MAY 26 2006
Technology Center 2600

Sir:

RENEWED PETITION REQUESTING ACTION ON APPLICATION

On July 5, 2005, a Petition Requesting Action on Application was filed in the US Patent Office. Applicant has received no formal indication of action on the Petition. The undersigned has spoken telephonically with Mr. Steve Brantley of the Petitions Office, and believes that Petitions Office does not even have the Petition on its docket.

It is again respectfully requested that the US Patent Office respond to Applicants' Third Status Inquiry regarding the captioned application, and take (or advise) whatever action is need to obtain examination of the captioned application. If the captioned application has been abandoned via action of the US Patent Office or otherwise, it is respectfully requested that the abandonment be rescinded or otherwise corrected, or that the application be revived.

A copy of the July 5, 2005 Petition and postcard evidencing filing of the Petition on July 5, 2005 are attached as Exhibits 1 and 2, respectively.

Facts

1. The captioned application was filed on April 6, 1999 and afforded the above-referenced serial number.
2. A first Status Inquiry was filed on October 8, 2001. *See*, Exhibit 13. A response from the Patent Office was subsequently received stating that "an expected date for action should be approximately November 2001." *See*, Exhibit 14.
3. A second Status Inquiry was filed on October 8, 2002. *See*, Exhibit 15. A response from the Patent Office was received on November 21, 2002 stating "We project that this application will be first examined in 0 to 3 months from today." *See*, Exhibit 16.
4. A third Status Inquiry was filed on October 6, 2004. *See*, Exhibit 17. No response has been received.
5. Attached is PAIR printout (dated July 7, 2005) showing that the application was "docketed to Examiner in GAU" for a third time on April 8, 2003. *See*, Exhibit 18. The PAIR printout also shows a cryptic, not-understood April 8, 2004 entry "Duplicate case has been deactivated". The PAIR printout further indicates a status of "Missassigned application number."
6. No files of Nixon & Vanderhye, paper or computerized, show receipt of any office action or substantive communication from the US Patent Office for the captioned application, and in fact no communication from the US Patent Office after the November 21, 2002 response to Status Request. Nor does the PAIR printout show mailing of any office action or substantive communication.
7. Applicants filed a similar application with same title on April 1, 1999, which was afforded Serial Number 09/283,919. Applicants did not respond to communications from the US Patent Office with respect to the earlier-filed Serial Number 09/283,919, and permitted abandonment of the 09/283,919 application, with the intention of pursuing the captioned application instead.

8. As a result of a telephone conversation with Mr. Steve Brantley of the Petitions Office, the undersigned is of the belief that the US Patent Office may have abandoned the captioned application by incorrectly attributing either fees or documents or both to the similar application mentioned in paragraph 7 above, rather than to the captioned application.

9. A complete copy of the application as filed resides in the PTO electronic files but is mischaracterized as a “miscellaneous incoming letter” in the image file wrapper for the captioned application. Insofar as the undersigned can surmise, the US Patent Office has not captured any other paper for the application in electronic form.

Relief Sought

It is respectfully requested that the US Patent Office respond to Applicants' Status Inquiries, and moreover advance prosecution of the captioned application. If for any reason the application has been incorrectly discarded or deemed abandoned by the US Patent Office, Applicants request that the US Patent Office on its own initiative make appropriate corrective remedy. If the application has been discarded or deemed abandoned by the US Patent Office for any alleged action or inaction of Applicants, Applicants request an explanation and an opportunity to take any remedial action.

In the event that the US Patent Office has lost the file or otherwise may need to construct some or all of the file for the captioned application, the undersigned submits herewith true and accurate copies of Exhibits 1 – 17 (from the undersigned's files, unless otherwise noted) which should be included in the PTO file:

Exhibit 1: Copy of the July 5, 2005 Petition.

Exhibit 2: Copy of postcard evidencing filing of the Petition on July 5, 2005.

Exhibit 3: Application as filed (printed from the US PTO website image file wrapper for the captioned application, including Rule 53(b) transmittal letter, all mischaracterized as a “miscellaneous incoming letter”).

Exhibit 4: IDS (with PTO-1449 but without references) filed April 6, 1999.

Exhibit 5: Copy of postcard receipt, evidencing filing of application on April 6, 1999 with Serial Number.

Exhibit 6: Notice to File Missing mailed April 28, 1999.

Exhibit 7: Response to Notice to File Missing mailed April 28, 1999, including Declaration and Assignment, all filed June 9, 1999.

Exhibit 8: Assignment and Recordation Request, filed June 9, 1999.

Exhibit 9: Official Filing Receipt, mailed June 18, 1999.

Exhibit 10: Notice of Recordation, mailed August 12, 1999.

Exhibit 11: IDS filed December 10, 1999.

Exhibit 12: Supplemental Declaration filed January 4, 2001.

Exhibit 13: Status Inquiry filed October 8, 2001.

Exhibit 14: Response to Status Inquiry filed October 8, 2001.

Exhibit 15: Second Status Inquiry filed October 8, 2002.

Exhibit 16: Response to Second Status Inquiry mailed November 21, 2002.

Exhibit 17: Third Status Inquiry filed October 6, 2004.


Exhibit 18: Transaction History from USPTO PAIR System

The undersigned submits that Exhibit 18 proves, e.g., mailing/filing of Exhibits 6 – 7, and 11.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application, including any Petition Fee. It is hoped, under the apparent circumstances, that a Petition fee or any other fee would not be assessed against the Applicants.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 
H. Warren Burnam, Jr.
Reg. No. 29,366

HWB:lsh
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

WILLARS et al.

Serial No. 09/286,471

Filed: April 6, 1999

Atty. Ref.: 2380-122

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Examiner: Not Yet Assigned

For: INTER-SYSTEM HANDOVER --
GENERIC HANDOVER MECHANISM

* * * * *

July 8, 2005

MAIL STOP PETITIONS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

PETITION REQUESTING ACTION ON APPLICATION

It is respectfully requested that the US Patent Office respond to Applicants' Third Status Inquiry regarding the captioned application, and take (or advise) whatever action is need to obtain examination of the captioned application.

Facts

1. The captioned application was filed on April 6, 1999 and afforded the above-referenced serial number.
2. A first Status Inquiry was filed on October 8, 2001. A response from the Patent Office was subsequently received stating that "an expected date for action should be approximately November 2001."
3. A second Status Inquiry was filed on October 8, 2002. A response from the Patent Office was received on November 21, 2002 stating "We project that this application will be first examined in 0 to 3 months from today."

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7. Applicants filed a similar application with same title on April 1, 1999, which was afforded Serial Number 09/283,919. Applicants did not respond to communications from the US Patent Office with respect to the earlier-filed Serial Number 09/283,919, and permitted abandonment of the 09/283,919 application, with the intention of pursuing the captioned application instead.

Relief Sought

It is respectfully requested that the US Patent Office respond to Applicants' Status Inquiries, and moreover advance prosecution of the captioned application. If for any reason the application has been incorrectly discarded or deemed abandoned by the US Patent Office, Applicants request that the US Patent Office on its own initiative make appropriate corrective remedy. If the application has been discarded or deemed abandoned by the US Patent Office for any alleged action or inaction of Applicants, Applicants request an explanation and an opportunity to take any remedial action.


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WILLARS et al.
Serial No. 09/286,471

apparent circumstances, that a Petition fee or any other fee would not be assessed against the Applicants.

Respectfully submitted,

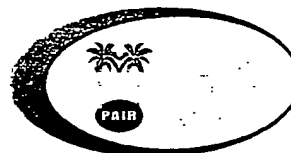
NIXON & VANDERHYE P.C.

By: 
H. Warren Burnam, Jr.
Reg. No. 29,366

HWB:lsh
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100



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PATENT APPLICATION INFORMATION RETRIEVAL


Search results as of: 7-7-2005::16:6:44 E.T.

Search results for application number: 09/286,471			
Application Number:	09/286,471	Customer Number:	-
Filing or 371(c) Date:	04-06-1999	Status:	Missassigned Application Number
Application Type:	Utility	Status Date:	06-09-2004
Examiner Name:	TRINH, SONNY	Location:	OIPE - INITIAL EXAM MANAGER'S OFFICE, ST - 7A CORRIDOR
Group Art Unit:	2685	Location Date:	09-14-2000
Confirmation Number:	5036	Earliest Publication No:	-
Attorney Docket Number:	2380-122	Earliest Publication Date:	-
Class/ Sub-Class:	455/436	Patent Number:	-
First Named Inventor:	PER WILLARS, STOCKHOLM, (SE)	Issue Date of Patent:	-
Title Of Invention:	INTER-SYSTEM HANDOVER-GENERIC HANDOVER MECHANISM		

Search Options

☐ Continuity Data

File History	
Date	Contents Description
04-08-2004	Duplicate case has been deactivated
04-08-2003	Case Docketed to Examiner in GAU
10-06-2000	Case Docketed to Examiner in GAU
12-10-1999	Information Disclosure Statement (IDS) Filed
04-06-1999	Information Disclosure Statement (IDS) Filed
07-30-1999	Case Docketed to Examiner in GAU
06-21-1999	Application Dispatched from OIPE
06-18-1999	Application Is Now Complete
04-28-1999	Notice Mailed--Application Incomplete--Filing Date Assigned
04-20-1999	IFW Scan & PACR Auto Security Review
04-12-1999	Initial Exam Team nn

Serial No.: 09/286,471
Applicant: WILLARS et al
Title: Inter-system Handover-
Generic Handover System

Atty: HWB
Date: 7/8/05
Client: 2380 T22
Ref: 122

____ Amendment
____ Pages Specification
____ Claims
____ Sheets Drawings: Formal _____
Informal _____
____ Declaration (_____ Pages)
____ Assignment
____ Priority Document
____ Base Issue Fee Transmittal
____ Check Enclosed (\$ _____)
____ Credit Card Payment Form (\$ _____)



Other Petition Requesting Action on Appln.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
REQUEST FOR FILING APPLICATION UNDER 37 CFR 53(b)
WITHOUT FILING FEE OR EXECUTED INVENTOR'S DECLARATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Atty. Dkt. 2380-122
Date: April 6, 1999

Sir:

This is a request for filing a new PATENT APPLICATION under Rule 53(b) entitled:

INTER-SYSTEM HANDOVER – GENERIC HANDOVER MECHANISM

without a filing fee and/or without an executed inventor's oath/declaration.

This application is made by the below identified inventor(s). Attached hereto are the following papers:

☒ An abstract together with

32 pages of specification and claims including

26 numbered claims and also attached is/are

17 sheets of accompanying drawings.

☐ This application is based on the following prior foreign application(s):

Application No.

Country

Filing Date

respectively, and priority is hereby claimed therefrom.

☐ This application is based on the following prior provisional application(s):

Application No.

Filing Date

respectively, and priority is hereby claimed therefrom.

☐ Certified copy/ies of foreign applications attached.

☐ This application is a ☐ continuation/☐ division/☐ continuation-in-part of application Serial No. , filed

☐ Please amend the specification by inserting before the first line: --This application is a ☐ continuation/☐ division/☐ continuation-in-part of application Serial No. , filed --

☐ Please amend the specification by inserting before the first line: --This is a continuation of PCT application No. , filed --

☐ Please amend the specification by inserting before the first line: --This application claims the benefit of U.S. Provisional Application No. , filed --

☐ Preliminary amendment to claims (attached hereto), to be entered before calculation of the fee.

☐ Also attached.

1. Inventor: **Per** **WILLARS** **Sweden**
(first) MI (last) (citizenship)
Residence: (city) **Stockholm** (state/country) **Sweden**
Post Office Address: **Rindögatan 19, Stockholm, Sweden**
(incl zip code) **SE-115 36**
2. Inventor: **Mats** **STILLE** **Sweden**
(first) MI (last) (citizenship)
Residence: (city) **Stockholm** (state/country) **Sweden**
Post Office Address: **Asogatan 116, Stockholm, Sweden**
(incl zip code) **SE-116 24**
3. Inventor: **Göran** **RUNE** **Sweden**
(first) MI (last) (citizenship)
Residence: (city) **Linköping** (state/country) **Sweden**
Post Office Address: **Sandgårdsgatan 5A, Linköping, Sweden**
(incl zip code) **SE-582 52**

NOTE: FOR ADDITIONAL INVENTORS, check box ☐ and attach sheet with same information.

Address all future communications to NIXON & VANDERHYE P.C., 1100 North Glebe Road, 8th Floor, Arlington, Virginia 22201.

1100 N. Glebe Road, 8th Floor

Arlington, Virginia 22201

Telephone: (703) 816-4000

Facsimile: (703) 816-4100

NIXON & VANDERHYE P.C.

By Atty.: J. Scott Davidson, Reg. No. 33,489

Signature: 

JSD:twg

Our Ref.: 2380-122
P11300US1

U.S. PATENT APPLICATION

Inventor(s): Per WILLARS
Mats STILLE
Göran RUNE

Invention: INTER-SYSTEM HANDOVER -- GENERIC HANDOVER MECHANISM

***NIXON & VANDERHYE P.C.
ATTORNEYS AT LAW
1100 NORTH GLEBE ROAD
8TH FLOOR
ARLINGTON, VIRGINIA 22201-4714
(703) 816-4000
Facsimile (703) 816-4100***

SPECIFICATION

INTER-SYSTEM HANDOVER - GENERIC
HANDOVER MECHANISMS

FIELD OF THE INVENTION

This invention relates to mobile radio systems and in particular
5 mobile radio handoff procedures.

BACKGROUND AND SUMMARY OF THE INVENTION

The first public mobile radio systems were introduced in the late
1970's and early 1980's. As a group, those now well-known systems
10 were referred to as "first generation" systems. They included the
"Advanced Mobile Phone System" (AMPS) in the United States,
"Nordic" in Scandinavia, "Total Access Communications System"
(TACS) in Britain, and "Nippon Mobile Telephone System" (NAMTS)
in Japan. They had certain transmission characteristics that were
15 generally common to all, such as analog frequency modulation at the
radio and digital control at the network. Otherwise, however, each
system used a communication standard unique to itself in comparison
to the others.

The so-called "second generation" mobile radio systems began
20 their introductions in the mid- to late-1980's. The first of these was

the “Group Special Mobile” (GSM) system which became the standard in Europe. The United States followed with “Digital AMPS” (DAMPS), the TDMA version of which was sometimes referred to by its standardization name, “IS-54.” The Japanese second generation system was called “Personal Digital Cellular” (PDC). Each of these systems had their own peculiar transmission characteristics and channel conditioning.

Presently, a number of initiatives are being proposed for the “third generation” of mobile radio systems. European third generation system research is being coordinated by the “Universal Mobile Telephone System” (UMTS) initiative, which is studying various proposals including wide-band CDMA (WCDMA), improved TDMA, hybrids, etc. Japanese initiatives for third generation are called “IMT-2000” and are focusing on wide-band CDMA. “Future Public Land Mobile Telecommunications System” (FPLMTS) is another proposed third generation network.

Mobile phones for the third generation systems will be intelligent multi-mode terminals for communication with first, second and/or third generation systems. A basic problem arises, however, in designing the third generation systems in that they must be backward compatible with all second generation systems. If a third generation system is to communicate solely with a like kind of second generation system, the modifications may be straightforward. However,

cooperation between countries employing disparate second generation systems is increasing. The European standards organization, ETSI, and the Japanese standards organizations, TTC and ARIB, are suggesting hand-off capability for third generation systems to both the
5 European second generation system (GSM) and the Japanese second generation system (PDC).

PDC and GSM protocols (as well as other second generation systems) are unique to each other. GSM as well as PDC, specifies frequencies (f) and time slots (TS) in a way unique to each system,
10 second generation systems employing CDMA specify appropriate codes, and other second generation systems use other kinds of protocol specifications. These protocols for second generation systems are well-known throughout the industry. In the example case of PDC and GSM compatibility to third generation UMTS, the PDC and GSM
15 specifications can be adapted to provide forward compatibility. So too can UMTS specifications be adapted for backward compatibility. In the case of UMTS, however, the standard will have to be compatible to multiple different kinds of second generation communications protocols, depending upon the type of second generation system a
20 UMTS network is in communication with at any given time.

The problem is particularly keen as it relates to hand-off procedures. As a mobile radio is handed off from a UMTS service area to a PDC service area, for example, the protocol change must be

accommodated from the third generation system characteristics to the PDC second generation characteristics. The same would be true if the mobile radio signal connection was handed from a UMTS system to any other second generation system. Thus, in the above example, the
5 UMTS would be required to communicate to PDC networks in a PDC compliant protocol, to a GSM network in a GSM compliant protocol, etc. The third generation system ends up supporting multiple mechanisms, namely PDC and GSM (among potentially others).

Previously, when systems were upgraded from first generation
10 to second generation, backward compatibility was an issue that was addressed. Handoff techniques from, for example, analog signaling to digital signaling, were accommodated through various techniques. Such techniques included, for example, signal acquisition, modulation, and re-alignment (re-synchronization) aspects. These techniques were
15 thus highly content-specific, requiring newer generational system to be fully, substantively conversant with previous generational systems. Content-specific AMPS to DAMPS handovers were also developed to accommodate first generation to second generation system upgrading. Such prior handoff systems did not address the problems associated
20 with handing off signals from a new generation of system to multiple different kinds of previous generation systems.

The present invention provides a highly efficient way of ensuring that handoffs from third generation systems to multiple

different kinds of second generation systems is done efficiently and without disruption. Thus, for example, third generation UMTS systems can ensure communication with any kind of second generation system, including DAMPS, GSM, PDC, etc.

5 In accordance with a preferred embodiment of the invention, a generic mechanism is provided to accommodate inter-system handovers between third generation systems and any other type of system including any type of second generation system. The generic mechanism includes a standardized data “container” structure that will
10 include whatever information is necessary to specify a communication to a neighboring cell system in the communication language (whether common or foreign) of that neighboring cell system. Thus, for example, if a handover to a GSM neighboring cell is to occur, the container may specify the communication parameters for a GSM
15 transmission. On the other hand, if the neighboring cell is PDC specific, the container may specify the communication parameters for a PDC transmission. Any other types of third, second, first, or other communication parameters can also be specified in the container. Using the container, the recipient of the handover can specify the
20 communication parameters to the mobile radio, and the mobile radio can specify its capabilities to the neighboring cell using the proper parameters. Importantly, the current cell (for example, third generation) need not read and interpret the content of the particular second generation parameters in the container, provided it simply

delivers the container to the neighboring cell for evaluation. In this way, the third generation system need not understand all previous generation protocols and the recipient second (or first) generation system is fooled into believing that it is communicating with another
5 second (or first) generation system.

BRIEF DESCRIPTION OF THE DRAWINGS

These, as well as other objects and advantages of this invention, will be more completely understood and appreciated by careful study
10 of the following more detailed description of a presently preferred exemplary embodiment of the invention taken in conjunction with the accompanying drawings, of which:

FIGURE 1A is a schematic presentation of an example mobile radio system;

15 FIGURE 1B is a schematic depiction of an example mobile radio system including multi-generational systems;

FIGURE 2 is a communication sequence depiction in accordance with a preferred embodiment of the present invention;

FIGURE 3 is a representation of broadcast system information from a network to a mobile station (third generation cells treated like foreign generation cells);

FIGURE 4 is a representation of broadcast system information
5 from a network to a mobile station (third generation cells treated differently compared to foreign generation cells);

FIGURE 5 is a representation of mobile capabilities information communicated from the mobile station (third generation cells treated like foreign generation cells);

10 FIGURE 6 is a representation of mobile capabilities information communicated from the mobile station (third generation cells treated differently compared to foreign generation cells);

FIGURE 7 is a representation of neighboring cell information communicated from the network (third generation cells treated like
15 foreign generation cells);

FIGURE 8 is a representation of neighboring cell information communicated from the network (third generation cells treated differently compared to foreign generation cells);

FIGURE 9 is a representation of measurement instruction
20 information communicated from the network (third generation cells treated like foreign generation cells);

FIGURE 10 is a representation of measurement instruction information communicated from the network (third generation cells treated differently compared to foreign generation cells);

5 FIGURE 11 is a representation of cell measurement report information communicated from the mobile station (third generation cells treated like foreign generation cells);

FIGURE 12 is a representation of cell measurement report information communicated from the mobile station (third generation cells treated differently compared to foreign generation cells);

10 FIGURE 13 is a representation of handoff command information communicated from the network (third generation cells treated like foreign generation cells);

FIGURE 14 is a representation of handoff command information communicated from the network (third generation cells treated
15 differently compared to foreign generation cells);

FIGURE 15 is a representation of inter-network handoff information communicated from an RAN to a CN; (third generation cells treated like foreign generation cells); and

FIGURE 16 is a representation of inter-network handoff
20 information communicated from an RAN to a CN (third generation cells treated differently compared to foreign generation cells).

DETAILED DESCRIPTION OF THE
PRESENTLY PREFERRED EMBODIMENT

The following example embodiment is described with respect to
5 second generation systems such as GSM and PDC and third generation
systems such as UMTS. However, the fundamental aspects of the
present invention are more generically applicable to all kinds of foreign
system handovers. The preferred embodiment of the present invention
is employed in combination with multi-mode mobile phones, i.e.,
10 mobile phones capable of communicating with at least two different
types of mobile phone systems under corresponding multiple different
types of communication protocol standards. Such multi-mode mobile
phones can communicate with two or more of, for example, GSM,
PDC, UMTS, etc. systems. The preferred embodiment of the present
15 invention will have equal applicability to all types of multi-mode
mobile phones presently available and developed in the future. That is,
the present invention provides a generic mechanism for intersystem
handover, regardless of the communication protocol specification of
the systems involved in the handover, or the type of multi-mode mobile
20 radio employed.

A preferred embodiment of the present invention involves a generic mechanism to provide intersystem handovers between a UMTS system and a GSM or PDC system. This occurs when, for example, a mobile phone in a UMTS service area is handed over to a
5 cell being supported by a GSM or PDC system. In such a case, the dual- (or multi-) mode mobile phone communicates with the UMTS system in accordance with UMTS protocols and is also capable of communicating with the GSM and PDC systems in accordance with their respective protocols.

10 As used herein, the term multi-mode mobile phone shall mean dual-mode mobile phones and other mobile phones capable of communicating according to two or more different communication protocols.

An example mobile radio system structure is shown in Figure
15 1a. In this particular structure, a third generation UMTS system 10 is shown as including mobile stations 30 communicating over a radio interface to base stations 28. Base stations 28 are included within UMTS terrestrial radio access network UTRAN which includes both radio network controllers 26 and base stations 28. Similarly, mobile
20 stations 30 can communicate through base station 23 to base station controller BSC 22. However, the base stations 23 and BSC 22 are not part of UMTS, as seen in Figure 1B.

The BSC 22 and UTRAN 24 communicate via interfaces "A" and "Gb", and "RAN IF" to respective core network service nodes. These nodes include the mobile switching center MSC 18 for circuit switched services and general packet radio service node GPRS 20 for packet switch services. These nodes in turn communicate with public service telephone network/ISDN node 12 or Internet node 14, respectively.

As depicted in Figure 1A, base station system 22 and base station 23 may comprise a second generation cellular system such as GSM or PDC. Mobile station 30 communicating with the base station 23 will employ an appropriate GSM or PDC protocol format for such communications. By the same token, mobile stations 30 in communication with the UMTS terrestrial radio access network 24, i.e., a third generation cellular system, communicate with the network via a UMTS standard protocol. When mobile stations move from a cell serviced by base station 28 to a cell serviced by base station 23, a handoff is created between a third generation system to a second generation system. In such cases, the mobile stations 30 must be multi-mode mobile radios capable of communicating in both second generation protocols and third generation protocols.

Figure 1B is a schematic representation of an extension of Figure 1A in which mobile radios communicate with second generation systems, third generation systems, and any other type of cellular

system presently available or available in the future. In such cases, the coordination of communication between these systems is made more effective and efficient through use of the present invention.

The present invention recognizes that the third generation
5 cellular system of, for example Figures 1A and 1B, in order to
effectuate a handoff procedure, must be capable of communicating the
handoff requirements to and from the disparate cellular systems to
which the handoff is occurring. One way to do this is to educate the
third generation system about the communication protocols for each
10 and every previous generation cellular system to which handoff may
occur. Such a task is daunting given the possible numbers of second
generation systems (and other prior systems) to which the third
generation cellular system may have to handoff a mobile radio
communication.

15 The present invention provides a more generic mechanism that
allows system handovers from third generation cellular systems to any
other type of system.

There are several different types of communication between the
network and the mobile radio that should have the generic support
20 offered by the present invention in order to solve the problem
identified. In reference to Figure 2, some of these kinds of
communications are discussed. With respect to Figure 2, a second
generation base station is shown on the left side of the Figure, and a

dual-mode (or multi-mode) mobile station is shown on the right.

Between the dual-mode mobile station and the second generation base station is the UMTS terrestrial radio access network UTRAN which is servicing the cell in which the mobile stations are currently

5 communicating. In the embodiment shown in Figure 2, the mobile station is preparing to be handed off from the UMTS cell through the core network CN structures to a cell serviced by the second generation base station shown on the left of Figure 2. Thirteen different communications are described in Figure 2 in order to illustrate the
10 generic mechanism used by the present invention with respect to certain of these communications.

Communication step 1 in Figure 2 is a broadcast of system information from the UMTS system to the mobile stations acting in otherwise idle mode, i.e. to single mode mobile stations as well as
15 multi-mode mobile stations. In this communication step 1, the network supplies the mobile station in idle mode (i.e., not in communication with the network except through receipt of the broadcast information on the control channel of a cell) with neighboring cell information for at least the cell serviced by the second generation base station on the
20 left of Figure 2. As shown in step 1, the broadcast system information from the third generation UTRAN can include information in a so-called "container" (described in more detail following) telling the dual-mode mobile stations that handoff capabilities are available in WCDMA mode (third generation) or in any other kind of second

generation mode (GSM/PDC). Of course, the UTRAN communicates with the dual-mode mobile station in the third generation wideband CDMA mode (WCDMA), not in the GSM/PDC/Other protocol, but simply identifies to the dual-mode mobile station that container
5 capability is available through the UTRAN for handoff to other than third generation systems.

After the broadcast system information is sent in step 1, a connection setup procedure is developed in step 2 between the UTRAN and the mobile station. This follows standard connection
10 setup procedures between the network and the mobile station.

In step 3, the mobile radio provides the network with an indication of its radio related capabilities. The mobile radios make this communication to the third generation UTRAN, in this example in WCDMA mode. As part of its capabilities information, the mobile
15 station may also communicate to the network that it is capable of communicating in GSM/PDC/Other modes as well. This information containing the dual-mode aspects of the mobile station is included in the return "container" from the mobile station to the network, as described in more detail below.

20 In step 4 of Figure 2, the network, which now knows that the mobile station can operate in dual-mode based on the capabilities provided to it in step 3, provides the mobile station with neighboring cell information. This transmission to the mobile station will include

the container information for neighboring cells, whether they are like generation or foreign generation systems.

In step 5, the network provides the mobile station with measurement control information and instructions. Again, this
5 information will include the container for foreign cell measurement control information, as described in more detail below.

Thereafter, the mobile station takes the measurements it was instructed to take from the neighboring cells. The results of the measurements are reported to the network in step 6. These
10 measurement reports for neighboring cells include the container for measurements on the foreign neighboring cells, as described below.

In step 7, the network makes the decision whether to handoff the mobile station to a foreign neighboring cell. Once the decision is made to handoff, the third generation network UTRAN initiates a handoff
15 command through the appropriate core network in step 8 to the foreign neighboring cell base station in step 9. In the case of Figure 2, the foreign neighboring cell is a second generation base station, which issues a handoff command at step 10 back to the core network. The core network relays the handoff command as "Handoff Command B"
20 to the third generation network UTRAN, which in turn delivers the "Handoff Command C" to the mobile station.

Steps 9 and 10 could also be via another MSC, in the same or a different network. The present invention is not limited to a particular network architecture, e.g. an architecture with MSCs and BSs. This architecture is herein only used as an example.

5 Thereafter, the mobile station is handed off to the second generation base station and therefore begins communication in the second generation protocol (for example, GSM or PDC), in step 11. Finally, the second generation base station (or another second generation node relevant to that particular second generation system
10 architecture) informs the core network that the handoff is complete in step 12 and the core network releases the third generation system resources in step 13.

The presently preferred embodiment of the invention provides generic support between the third generation and second generation
15 systems of, for example, Figure 2 by providing the generic container mechanisms identified above to support several of the communications described in Figure 2. In particular, non-generational (i.e., generic) support is required for the control channel broadcast information (step 1), the mobile capabilities communication (step 3), the neighboring cell
20 information communication (step 4), the cell measurement and reporting instruction (step 5), the cell measurement result communication (step 6), and the handoff command C. In these cases requiring generic support, there is a need for communication between

the third generation network in the mobile station regarding information from a foreign system. For example, in Figure 2, if the second generation base station is a GSM system, the UMTS must communicate with the mobile station regarding foreign GSM
5 information.

There may also be cases of communication with the network that share the same requirement for generic support described above, for example, when transferring a request for handover to another system between a radio network node (RAN node) and a core network
10 node (CN node) or when transferring a handover command between a CN node and a RAN node.

The solution for providing generic communication capabilities between disparate systems is to provide "containers" for foreign system information in a communication transmission. The generic
15 containers allow a non-conversant third generation system to avoid learning multitudes of bilaterally specific procedures in order to communicate second generation (or other generation) information to a dual-mode mobile station, or vice a versa. Examples of how these containers are employed in the generic communications of Figure 2 are
20 shown in detail in Figures 3 through 16.

Figures 3 and 4 are example embodiments of the broadcast system information communication (step 1) of Figure 2. Figure 3 is an embodiment in which third generation cells are treated as any other cell

and Figure 4 is an example of third generation cells being treated differently from foreign cells.

Figures 5 and 6 are example embodiments of the mobile capabilities communication (step 3) of Figure 2. Figure 5 is an
5 embodiment in which third generation cells are treated as any other cell and Figure 6 is an example of third generation cells being treated differently from foreign cells.

Figures 7 and 8 are example embodiments of the neighboring cell information communication (step 4) of Figure 2. Figure 7 is an
10 embodiment in which third generation cells are treated as any other cell and Figure 8 is an example of third generation cells being treated differently from foreign cells.

Figures 9 and 10 are example embodiments of the cell measurement instruction (step 5) of Figure 2. Figure 9 is an
15 embodiment in which third generation cells are treated as any other cell and Figure 10 is an example of third generation cells being treated differently from foreign cells.

Figures 11 and 12 are example embodiments of the cell measurement result (step 6) of Figure 2. Figure 11 is an embodiment
20 in which third generation cells are treated as any other cell and Figure 12 is an example of third generation cells being treated differently from foreign cells.

Figures 13 and 14 are example embodiments of the handoff command communication (“Handoff Command B” as well as “Handoff Command C”) of Figure 2. Figure 13 is an embodiment in which third generation cells are treated as any other cell and Figure 14 is an example of third generation cells being treated differently from foreign cells.

Figures 15 and 16 are example embodiments of the inter-network handoff communications with CN (step 8) of Figure 2. Figure 15 is an embodiment in which third generation cells are treated as any other cell and Figure 16 is an example of third generation cells being treated differently from foreign cells.

In Figures 3 and 4, the neighboring cell information broadcasted to the mobile station on the control channel in step 1 includes the container for the foreign neighboring cells as the “neighboring cell data (as specified by the specifications for the particular system)” of Figure 3 and “neighboring cell data (as specified by the foreign system)” of Figure 4. A container structure is provided within the data map for each neighboring cell reported. This container is structurally generic to any communication protocol and content-specific to the communication protocol of the particular cell being reported on.

In Figures 5 and 6, the transfer of mobile station capabilities of step 3 of Figure 2 includes the container of capabilities related to the foreign system. This is shown in Figure 5 as the “MS radio

capabilities data (as specified by the specifications for the particular system),” and in Figure 6 as the “MS radio capabilities data (as specified by the foreign system),” One container is provided for each mobile radio capability reported to the network.

5 In Figures 7 and 8, the neighboring cell information is provided by the third generation network to the mobile station and includes the container for foreign neighboring cells. This is shown in Figure 7 as “neighboring cell data (as specified by the specifications for the particular system)” and in Figure 8 as “neighboring cell data (as
10 specified by the foreign system).” A generic container is provided for each reported neighboring cell to include whatever content-specific protocol data is particular to the system type of each neighboring cell.

 Figures 9 and 10 relate to the cell measurement and reporting instruction (step 5) of Figure 2 and provide the mobile station with a
15 container for foreign measurement control information. This is shown in Figure 9, for example as “measurement control data (as specified by the specifications for the particular system)” and in Figure 10 as “measurement control data (as specified by the foreign system).” Containers are provided for each of the neighboring cells being
20 reported upon and will contain data characteristic of the cell type being reported upon.

 Figures 11 and 12 relate to the measurement reporting for neighboring cells by the mobile station in step 6 of Figure 2. These

measurement reports include the container for measurements on foreign neighboring cells as shown in Figure 11 as “measurement report data (as specified by the specifications for the particular systems)” and in Figure 12 as “measurement report data (as specified by the foreign system).” Containers are provided for reporting measurement data for each of the cells reported upon by the mobile station.

Figures 13 and 14 relate to the “Handoff Command C” of Figure 2, which is the command sent to the mobile station from the network ordering the mobile station to switch to the new cell (new channel). This command includes the container for the chosen foreign cell (channel) to which the mobile station is switching. Thus, if the second generation base station on the left of Figure 2 has been chosen for the handoff and is a GSM system, the Handoff Command C will include a container having GSM data written by the GSM network informing the mobile station about the appropriate GSM communication protocol characteristics. For example, in the case of GSM, the second generation system will provide the dual-mode mobile station with at least the appropriate frequency, time slots, and maximum power characteristics for the GSM transmissions. In Figure 13, the container is shown as “handover command’ (as specified by the specifications for the particular systems)” and in Figure 14 as “handover command’ (as specified by the foreign system)”. Figures 13 through 14 contain only a single container because the cell to which handoff is occurring

has been selected and other neighboring cells are no longer in the communication loop. Accordingly, the container of Figures 13 and 14 will include the handover command in accordance with the specifications dictated by the cell protocol for the selected cell to
5 which the handover is occurring.

As can be seen from the depictions in Figures 3 through 14, the preferred embodiment of the present invention provides a data container having a structure common within third generation systems, second generation systems, etc. in order to transmit foreign data types
10 through any particular system to a destination equipment that can read and understand the information provided in the container. With this embodiment, the third generation system need not consider the contents of the container per se, but can simply hand the contents to the mobile station which can read and understand them as needed.
15 Unlike the mobile station, the third generation network need not have the capability to read or act on the communication protocols of the foreign systems to which handoff is occurring but instead act simply as a conduit to deliver the container of foreign system information to the dual-mode mobile station.

20 There are also instances of communication within the network itself that share the same problem that can be efficiently remedied with the generic container mechanisms described above. Such inter-network communications include the transferring of a request for a

handover to another system as between a radio access node RAN node and a core network CN node. Figures 15 and 16 show example data maps for communications such as these inside the network. In Figures 15 and 16, as examples, when a handover is required, the radio access network sends a request for that handover to the core network in accordance with the mappings of Figures 15 and 16. Each target cell inquiry includes a container for “cell identifier (as specified by the foreign system)” in Figure 15. Again, this container provides a generic data mechanism that can be communicated by the third generation system to a second generation system but contains information that is foreign-system specific (which the third generation system need not necessarily comprehend). Figure 16 differs from Figure 15 in that the third generation cells are treated independently from foreign system cells. In the third generation cells, the container will always include third generation specific, “cell identifier (according to the UMTS specification).” On the other hand, the foreign target cell containers will include whatever foreign system specific information is appropriate within the generic container structure, “cell identifier (as specified by the foreign system).” In Figure 2 not only the communication from the UTRAN to the CN but also the communication from the CN to the UTRAN when CN sends the “Handoff Command B” to UTRAN can be made efficiently with the generic container mechanism. The Figures 13 and 14 could be seen as

an example not only on the “Handoff Command C” but also as an example of the “Handoff Command B.”

In the above example embodiments, UMTS, GSM, and PDC systems are described as examples only. The present container
5 structure is not limited to any one of these systems, but may be employed in any type of currently available system or in future generations of mobile radio systems.

The present invention has the advantage that each of the unique mobile radio systems may continue to communicate in its own
10 specification. There is no need for additional data mechanisms to be included into each of the particular generational systems in order for them to understand the specifications and protocols of prior or subsequent generational systems. Instead, each generational system simply knows to open the container it receives in order to extract the
15 protocol information that it needs for communications. Where a particular generational system does not need the protocol information of a foreign system, it simply transports the container down the communication stream.

The specifications of the container are not particular to the
20 present invention but may be any appropriate data mapping structure provided the structure is generic to all generational systems to which it applies. The contents of the container are, of course, left to the

specifications of the particular generational systems in the appropriate cell neighborhoods.

While the invention has been described in connection with what is presently considered to be the most practical and preferred
5 embodiment, it is to be understood that the invention is not to be limited to the disclosed embodiment, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.

WHAT IS CLAIMED IS:

- 1 1. A radio access network having a first communication
2 protocol, said radio access network defining first cells at least some of
3 which neighbor foreign cells employing a foreign communication
4 protocol different from said first communication protocol, said foreign
5 communication protocol associated with a foreign communication
6 system, the radio access network comprising:
7 radio access network node structure for communicating with
8 multi-mode mobile radios in said first cells, and
9 a data mechanism to exchange handover information through
10 said network node structure with said multi-mode radios as said multi-
11 mode radios are to be handed-over to said foreign cells, said data
12 mechanism having a dedicated data mapped structure generic to said
13 radio access network and said foreign communication system such that
14 said generic data mapped structure transports both handover data
15 content unique to said first communication protocol and handover data
16 content unique to said foreign communication protocol.
- 1 2. A radio access network as in claim 1, wherein the radio
2 access network node fills the dedicated data map structure to include
3 broadcast system information.

1 3. A radio access network as in claim 1, wherein the multi-
2 mode radios fill the dedicated data map structure to include mobile
3 radio capabilities information.

1 4. A radio access network as in claim 1, wherein the radio
2 access network node fills the dedicated data map structure to include
3 neighboring cell information.

1 5. A radio access network as in claim 1, wherein the radio
2 access network node fills the dedicated data map structure to include
3 neighboring cell measurement instructions.

1 6. A radio access network as in claim 1, wherein the mobile
2 radios fill the dedicated data map structure to include neighboring cell
3 measurement results.

1 7. A radio access network as in claim 1, wherein the radio
2 access network node fills the dedicated data map structure to include
3 handoff command information.

1 8. A mobile radio network, comprising:
2 a radio access network having an associated first communication
3 protocol for communicating to multi-mode mobile radios in first cells
4 serviced by said radio access network according to said first
5 communication protocol, and

6 a core network having an associated foreign communication
7 protocol for communicating to multi-mode mobile radios in at least
8 foreign cells neighboring said first cells and serviced by said core
9 network according to said foreign communication protocol, said radio
10 network and said core network being in handoff communication with
11 each other to handoff said mobile radios when said mobile radios
12 commute from one of said first cells to one of said foreign cells,
13 said handoff communication being in accordance with a data
14 mechanism having a dedicated data mapped structure portion that is
15 generic to said radio access network and said core network such that
16 said same generic data mapped structure transports both handover data
17 content unique to said first communication protocol and handover data
18 content unique to said foreign communication protocol.

1 9. A mobile radio network as in claim 8, wherein the radio
2 access network fills the dedicated data map structure to include
3 handoff request information.

1 10. A mobile radio network as in claim 8, wherein the multi-
2 mode mobile radios fill the dedicated data map structure to include
3 mobile radio capabilities information.

1 11. A mobile radio network as in claim 8, wherein the radio
2 access network fills the dedicated data map structure to include
3 neighboring cell information.

1 12. A mobile radio network as in claim 8, wherein the core
2 network fills the dedicated data map structure to include handoff
3 command information.

1 13. A method of exchanging handoff-specific information
2 between a first node in a mobile radio network and a foreign node in
3 the mobile radio network, comprising the steps of:
4 providing a data mechanism having a handoff information
5 dedicated to information identifying handoff characteristics between
6 said first node and said foreign node,
7 receiving at the first node said handoff-specific information, said
8 first node employing a first radio communication protocol type, said
9 foreign node employing a foreign radio communication protocol type
10 different from said first radio communication protocol type,
11 filling said handoff information container with said handoff-
12 specific information in a form particular to said foreign radio
13 communication protocol type, said handoff information container being
14 of a generic structure to transport said handoff-specific information
15 according to both said first communication protocol type and said
16 foreign communication protocol type.

1 14. A method of exchanging handoff-specific information as in
2 claim 13, wherein the handoff information container includes broadcast
3 system information.

1 15. A method of exchanging handoff-specific information as in
2 claim 13, wherein the handoff information container includes mobile
3 radio capabilities information.

1 16. A method of exchanging handoff-specific information as in
2 claim 13, wherein the handoff information container includes
3 neighboring cell information.

1 17. A method of exchanging handoff-specific information as in
2 claim 13, wherein the handoff information container includes
3 neighboring cell measurement instructions.

1 18. A method of exchanging handoff-specific information as in
2 claim 13, wherein the handoff information container includes
3 neighboring cell measurement results.

1 19. A method of exchanging handoff-specific information as in
2 claim 13, wherein the handoff information container includes mobile
3 radio handoff command information.

1 20. A method of exchanging handoff-specific information as in
2 claim 13, further including the steps of
3 exchanging handoff-specific information between core networks
4 associated with, respectively, said first radio communication protocol
5 and said foreign communication protocol, and

6 filling said handoff-specific information container between said
7 core networks with said handoff information in a form particular to
8 said foreign radio communication protocol type.

1 21. A method of exchanging handoff-specific information as in
2 claim 20, wherein the core networks fill the dedicated data map
3 structure to include handoff request information.

1 22. A method of exchanging handoff-specific information as in
2 claim 20, wherein the core networks fill the dedicated data map
3 structure to include mobile radio capabilities information.

1 23. A method of exchanging handoff-specific information as in
2 claim 20, wherein the core networks fill the dedicated data map
3 structure to include neighboring cell information.

1 24. A method of exchanging handoff-specific information as in
2 claim 23, wherein the core networks fill the dedicated data map
3 structure to include handoff command information.

1 25. A mobile radio network as in claim 8, wherein the radio
2 access network fills the dedicated data map structure to include
3 neighboring cell measurement instructions.

1 26. A method of exchanging handoff-specific information as in
2 claim 20, wherein the core networks fill the dedicated data map
3 structure to include neighboring cell measurement instructions.

ABSTRACT OF THE DISCLOSURE

A data mechanism is described for assisting third generational mobile radio systems to handoff mobile radio connection to neighboring cells when the neighboring cells are of a foreign
5 generational type. The data mechanism includes a container in the data map which is a generic structure, not particular to any generational system. The generic structure can be content-specific to any of many different generational communications protocols.

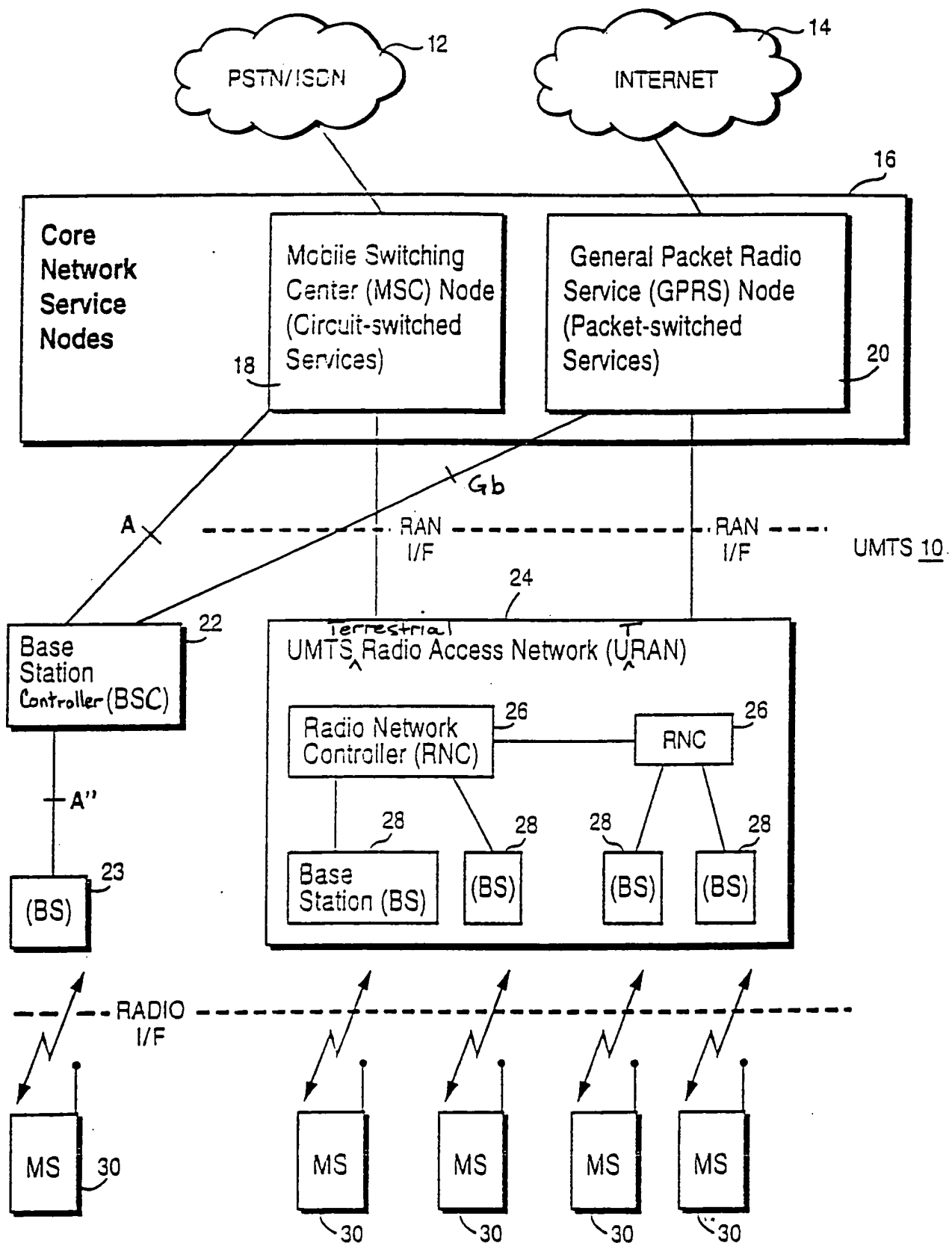


Fig. 1A

PSTN, ISDN, INTERNET, etc.

Second Generation Cellular System (2G)

Core Network
Service Node(s)

Base Station
Controller(s) (BSCs)

BS

BS



Third Generation Cellular System

Core Network
Service Node(s)

UMTS Terrestrial Radio Access
Network (UTRAN)

Radio Network
Controller (RNC)

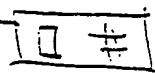
RNC

Base
Station (BS)

BS

BS

BS



Other Cellular System

Core Network
Service Node(s)

BS

BS

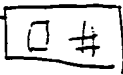


FIGURE 1B

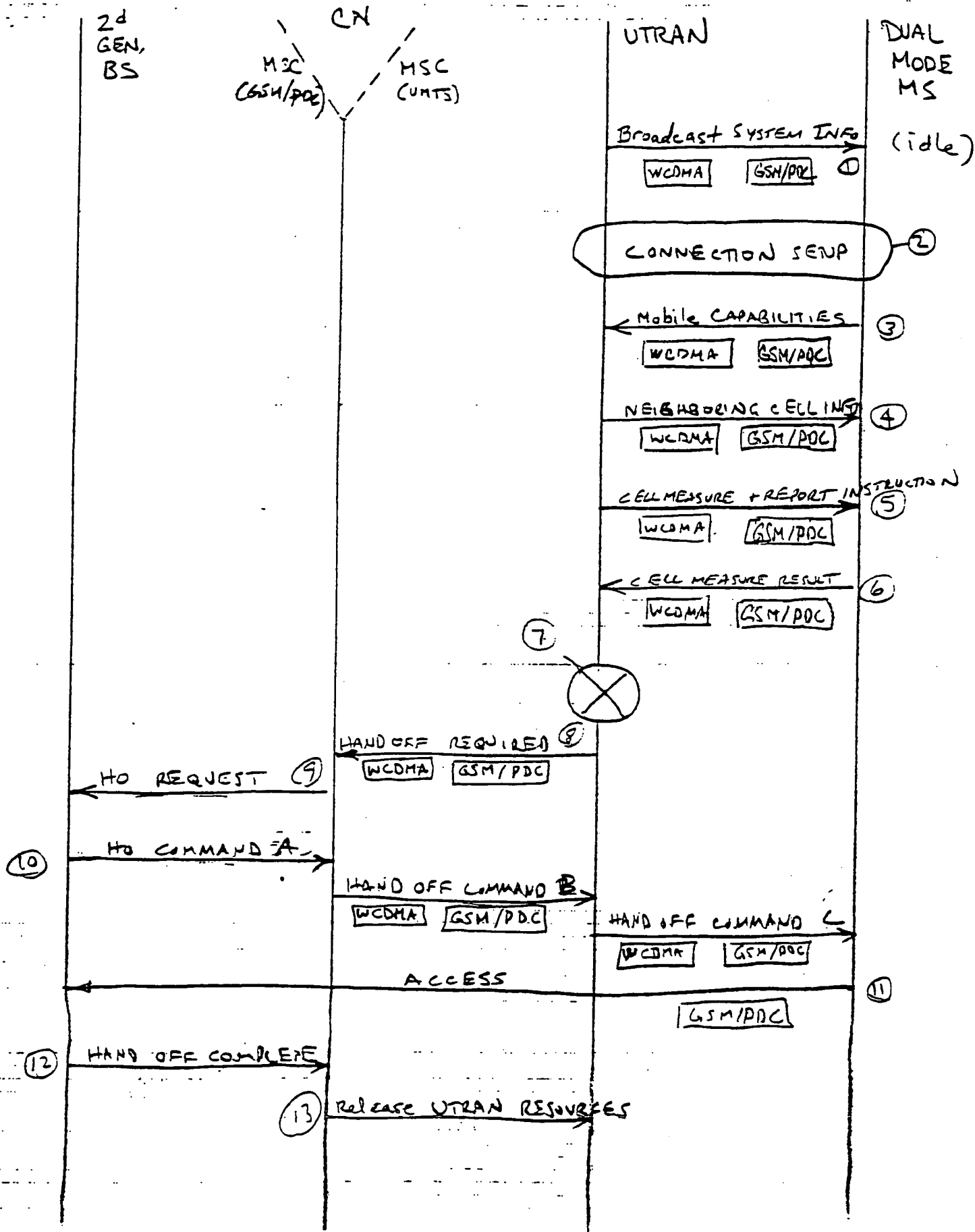


FIGURE 2

⋮
Neighbouring Cell n
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the specifications for the particular system)
Neighbouring Cell n-1
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the specifications for the particular system)
Neighbouring Cell n-2
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the specifications for the particular system)
⋮

Figure 3 Alternative 1a - General Alternative, UMTS cells are treated as any cell.

⋮
Neighbouring UMTS cells (according to the UMTS specification)
⋮
Neighbouring Cell n
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the foreign system)
Neighbouring Cell n-1
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the foreign system)
Neighbouring Cell n-2
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the foreign system)
⋮

Figure 2 Alternative 1b – Optimised Alternative, UMTS cells are treated differently.

	:
MS Radio Capabilities	
System Type (UMTS, Foreign Type 1, Foreign Type 2, ...)	
MS Radio Capabilities Data (as specified by the specifications for the particular system)	
MS Radio Capabilities	
System Type (Foreign Type 1, Foreign Type 2, ...)	
MS Radio Capabilities Data (as specified by the specifications for the particular system)	
	:

Figure 5 Alternative 2a - General Alternative, UMTS radio capabilities are treated as any radio capability.

	⋮
MS Radio Capabilities (according to the UMTS specification)	
	⋮
MS Radio Capabilities	
Cell Type (Foreign Type 1, Foreign Type 2, ...)	
MS Radio Capabilities Data (as specified by the specifications for the particular system)	foreign
	⋮

system

Figure 6 Alternative 2b - Optimised Alternative, UMTS radio capabilities are treated differently.

:
Neighbouring Cell n
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the specifications for the particular system)
Neighbouring Cell n-1
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the specifications for the particular system)
Neighbouring Cell n-3
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the specifications for the particular system)
:

Figure 5 Alternative 3a – General Alternative, UMTS cells are treated as any cell.

⋮
Neighbouring UMTS cells (according to the UMTS specification)
⋮
Neighbouring Cell n
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the foreign system)
Neighbouring Cell n-1
⋮
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the foreign system)
Neighbouring Cell n-3
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Neighbouring Cell Data (as specified by the foreign system)
⋮

Figure 6
 Alternative 3b – Optimised Alternative, UMTS cells are treated differently.

	:
Neighbouring Cell n	
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)	
Measurement Control Data (as specified by the specifications for the particular system)	
Neighbouring Cell n-1	
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)	
Measurement Control Data (as specified by the specifications for the particular system)	
Neighbouring Cell n-3	
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)	
Measurement Control Data (as specified by the specifications for the particular system)	
	:

Figure 7/ Alternative 4a - General Alternative, UMTS cells are treated as any
 9 cell.

⋮
Measurement Control Data for Neighbouring UMTS cells (according to the UMTS specification)
⋮
Neighbouring Cell n
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Measurement Control Data (as specified by the foreign system)
Neighbouring Cell n-1
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Measurement Control Data (as specified by the foreign system)
Neighbouring Cell n-3
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Measurement Control Data (as specified by the foreign system)
⋮

Figure 8 Alternative 4b – Optimised Alternative, UMTS cells are treated differently.

	⋮	
Neighbouring Cell n		
Measurement Report Data (as specified by the specifications for the particular system)		
Neighbouring Cell n+1		
Measurement Report Data (as specified by the specifications for the particular system)		
Neighbouring Cell n+3		
Measurement Report Data (as specified by the specifications for the particular system)		
	⋮	

Figure 9 // Alternative 3a - General Alternative, UMTS cells are treated as any cell.

⋮
Measurement Report for Neighbouring UMTS cells (according to the UMTS specification)
⋮
Neighbouring Cell n
Measurement Report Data (as specified by the foreign system)
Neighbouring Cell $n-1$
Measurement Report Data (as specified by the foreign system)
Neighbouring Cell $n-3$
Measurement Report Data (as specified by the foreign system)
⋮

Figure 10' Alternative 5c - Optimised Alternative, UMTS cells are treated differently.

(2)

Message discriminator = "Handover Command"
System Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
"Handover Command" (as specified by the specifications for the particular system)

Figure 1/13 Alternative 6a - General Alternative, UMTS cells are treated as any cell.

Message discriminator = "Handover Command"
Handover Command parameters specific to UMTS [optional ²]
Foreign Handover Command [optional parameter set ³]
System Type (Foreign Type 1, Foreign Type 2, ...)
"Handover Command" as specified by the foreign system)

Figure 12 Alternative 5c - Optimised Alternative. UMTS cells are treated differently

Message discriminator = "Handover Required"
⋮
Target Cell n
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
Cell Identifier (as specified by the foreign system)
Target Cell n+1
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
Cell Identifier (as specified by the foreign system)
Target Cell n+2
Cell Type (UMTS, Foreign Type 1, Foreign Type 2, ...)
Cell Identifier (as specified by the foreign system)
⋮

Figure 13 ¹⁵ Alternative Ta – General Alternative, UMTS cells are treated as any cell.

Message discriminator = "Handover Required"
⋮
UMTS Target Cell n
Cell Identifier (according to the UMTS specification)
UMTS Target Cell n-1
Cell Identifier (according to the UMTS specification)
UMTS Target Cell n-2
Cell Identifier (according to the UMTS specification)
⋮
Foreign Target Cell n
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Cell Identifier (as specified by the foreign system)
Foreign Target Cell n-1
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Cell Identifier (as specified by the foreign system)
Foreign Target Cell n-2
Cell Type (Foreign Type 1, Foreign Type 2, ...)
Cell Identifier (as specified by the foreign system)
⋮

Figure 14 Alternative To – Optimised Alternative, UMTS cells are treated differently.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Atty Dkt. 2380-122

C#/M#

WILLARS et al.

Group Art Unit: Unassigned

Serial No. NEW APPLICATION

Examiner: Unassigned

Filed: FILED HEREWITH

Title: INTER-SYSTEM HANDOVER – GENERIC
HANDOVER MECHANISMS

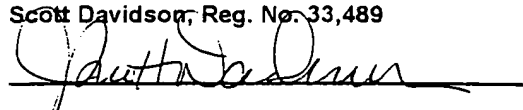
Date: April 6, 1999

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Sir:

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Pursuant to 37 C.F.R. 1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. One copy of the reference(s) is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

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- ☐ This IDS is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Applicant(s) hereby petition(s) that the IDS be considered. Attached is our check in the amount of \$130.00 to cover payment of the petition fee under 37 C.F.R. 1.17(i)(1). Please credit or debit Deposit Account No. 14-1140 as needed to ensure consideration of the disclosed information. A duplicate copy of this paper is attached.
- ☐ a. I hereby certify that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to the filing of this IDS. 37 C.F.R. 1.97(e)(1).
- ☐ b. I hereby certify that no item of information in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three (3) months prior to the filing of this IDS. 37 C.F.R. 1.97(e)(2).
- ☐ Relevance of the non-English language reference(s) is discussed in the present specification.
- ☐ The reference(s) was/were cited in a counterpart foreign application. An English language version of the foreign search report is attached for the Examiner's information.
- ☐ A concise explanation of the relevance of the non-English language reference(s) appears in the Appendix hereto.
- ☐ The Examiner's attention is directed to co-pending U.S. Patent Application No. _____, filed _____, which is directed to related technical subject matter. The identification of this U.S. Patent Application is not to be construed as a waiver of secrecy as to that application now or upon issuance of the present application as a patent. The Examiner is respectfully requested to consider the cited application and the art cited therein during examination.
- ☐ Copies of the references were cited by or submitted to the Office in parent Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. 120. Thus, Form PTO 1449 is attached without copies of these references. 37 C.F.R. 1.98(d).
- ☒ Other. REFERENCES CITED DURING PRELIMINARY SEARCH
- 1100 North Glebe Road, 8th Floor
Arlington, Virginia 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100
JSD:twg
- NIXON & VANDERHYE P.C.
By Atty: J. Scott Davidson, Reg. No. 33,489
Signature: 

**INFORMATION DISCLOSURE
CITATION**

ATTY. DOCKET NO.

SERIAL NO.

2380-122

NEW APPLICATION

APPLICANT

WILLARS et al.

(Use several sheets if necessary)

FILING DATE

GROUP

April 6, 1999

Unassigned

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,873,036	02/1999	VUCETIC			
	5,870,427	02/1999	TIEDEMANN, JR. ET AL.			
	5,845,203	12/1998	LaDUE			
	5,771,275	06/1998	BRUNNER ET AL.			
	5,640,414	06/1997	BLAKENEY, II. ET AL.			
	5,425,029	06/1995	HLUCHYJ ET AL.			
	5,345,467	09/1994	LOMP ET AL.			
	5,276,907	01/1994	MEIDAN			

FOREIGN PATENT DOCUMENTS

DOCUMENT	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
					YES	NO

OTHER DOCUMENTS (including Author, Title, Date, Pertinent pages, etc.)

	Antipolis, S., "UE-UTRAN Radio Interface Protocol Architecture; Stage 2;" European Telecommunications Standards Institute, UMTS YY.01, V1.0.0, December 1998, pgs. 1-39.
	Antipolis, S., "UMTS Terrestrial Radio Access Network (UTRAN); UTRA FDD; (UMTS XX.03 V1.3.1), European Telecommunications Standards Institute, February 1999, pgs. 1-23.

*Examiner		Date Considered	
-----------	--	-----------------	--

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application.

Serial No.: NEW APPLICATION Atty: JSD
Applicant: WILLARS et al. Date: 4/6/99
 Client/Matter: 2380-122
Title: INTER-SYSTEM HANDOVER -- GENERIC
 HANDOVER MECHANISM

32 Amendment
26 Pages Specification, Claims & Abstract
17 Claims
 Sheets of Drawings
 Declaration (Pages)
 Assignment (Pages) Including Cover
 Priority Document(s)
 Base Issue Fee Transmittal
\$ -0- Fee (Check)

Other: Request for Filing Application Under
 37 CFR 53(b) & Form 1449 IDS w/Refs.





UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO./TITLE
09/286,471	04/06/99	WILLARS	P 2380-122

DOCKETED

CLT/MATTER # 242 2380-122

NIXON & VANDERHYE
1100 NORTH GLEBE ROAD
8TH FLOOR
ARLINGTON VA 22201

MAIL DATE 4-28-99

NOT ASSIGNED

DUE DATE June 28, 1999

FINAL DEADLINE Oct 28, 1999

2744

DOCKETED BY [Signature] DATE MAILED:

04/28/99

NOTICE TO FILE MISSING PARTS OF APPLICATION
Filing Date Granted

An Application Number and Filing Date have been assigned to this application. The items indicated below, however, are missing. Applicant is given TWO MONTHS FROM THE DATE OF THIS NOTICE within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). If any of items 1 or 3 through 5 are indicated as missing, the SURCHARGE set forth in 37 CFR 1.16(e) of ☐ \$65.00 for a small entity in compliance with 37 CFR 1.27, or ☒ \$130.00 for a non-small entity, must also be timely submitted in reply to this NOTICE to avoid abandonment.

If all required items on this form are filed within the period set above, the total amount owed by applicant as a ☐ small entity (statement filed) ☒ non-small entity is \$ 778.00.

- ☒ 1. The statutory basic filing fee is:
- ☒ missing.
 - ☐ insufficient.
- Applicant must submit \$ 760 to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).

- ☒ 2. The following additional claims fees are due:
- \$ 108 for 6 total claims over 20.
- \$ _____ for _____ independent claims over 3.
- \$ _____ for multiple dependent claim surcharge.
- Applicant must either submit the additional claim fees or cancel additional claims for which fees are due.

- ☒ 3. The oath or declaration:
- ☒ is missing or unsigned.
 - ☐ does not cover the newly submitted items.
- An oath or declaration in compliance with 37 CFR 1.63, including residence information and identifying the application by the above Application Number and Filing Date is required.
- ☐ 4. The signature(s) to the oath or declaration is/are by a person other than inventor or person qualified under 37 CFR 1.42, 1.43 or 1.47.
- A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- ☐ 5. The signature of the following joint inventor(s) is missing from the oath or declaration:

An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.

- ☐ 6. A \$50.00 processing fee is required since your check was returned without payment (37 CFR 1.21(m)).
- ☐ 7. Your filing receipt was mailed in error because your check was returned without payment.
- ☐ 8. The application was filed in a language other than English.
- Applicant must file a verified English translation of the application, the \$130.00 set forth in 37 CFR 1.17(k), unless previously submitted, and a statement that the translation is accurate (37 CFR 1.52(d)).
- ☐ 9. OTHER: _____

Direct the reply and any questions about this notice to "Attention: Box Missing Parts."

A copy of this notice MUST be returned with the reply.

W Newt
Customer Service Center

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

WILLARS et al.

Serial No. 09/286,471

Filed: April 6, 1999

For: INTER-SYSTEM HANDOVER -- GENERIC
HANDOVER MECHANISM

Assistant Commissioner for Patents
Washington, D.C. 20231

Attention: Application Branch

Atty. Dkt. 2380-122

Date: June 9, 1999

The attached completes filing of the above-identified patent application:

- ☒ Signed Rule 63 Declaration alone OR
☐ Signed Declaration plus attached copy of originally filed specification/drawings.
☒ **NOTICE TO FILE MISSING PARTS OF APPLICATION FILING DATE GRANTED** form.
☒ Record and return the attached assignment.
☐ Priority is hereby claimed per Rule 55 & 35 USC119 based on prior foreign application(s) Nos.:
 Application Nos. **Country** **Filing Date**

respectively.

- ☐ This application is based on the following prior provisional application(s):
Application No. **Filing Date**

respectively and priority is hereby claimed therefrom.

Certified copy(ies) of foreign application(s): ☐ attached; ☐ already filed on _____
 in U.S. Application Serial No. _____, filed on _____.

- ☐ The undersigned verifies that the above-identified application is identical to: filed _____, as amended on _____.
☐ Verified Statement attached establishing "small entity" status (Rules 9 & 27)
☐ Also attached:

Fees are attached as calculated below:

Basic filing fee				\$	760.00
Total Effective claims	26	- 20 =	6	x \$	18.00
				\$	108.00
Independent claims	3	- 3 =	0	x \$	78.00
				\$	0.00
If any proper multiple dependent claims now added for first time, add \$260.00 (ignore improper)				\$	0.00
				FILING FEE	\$ 868.00
Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s) (\$110.00/1 month; \$380.00/2 months; \$870.00/3 months; \$1,360.00/4 months)				\$	0.00
Surcharge (\$130.00) if Declaration or filing fee first now submitted				\$	130.00
				FIRST SUBTOTAL	\$ 998.00
If "small entity," enter half (½) of subtotal and subtract				-\$	0.00
				SECOND SUBTOTAL	\$ 998.00
Assignment Recording Fee (\$40.00)				\$	40.00
				TOTAL FEE ENCLOSED	\$ 1,038.00

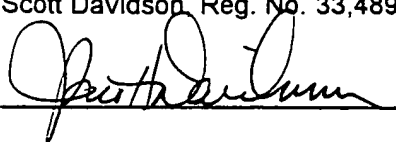
Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

1100 North Glebe Road, 8th Floor
 Arlington, Virginia 22201-4714
 Telephone: (703) 816-4000
 Facsimile: (703) 816-4100
 JSD:twg

NIXON & VANDERHYE P.C.

By Atty: J. Scott Davidson, Reg. No. 33,489

Signature: _____



RULE 63 (37 C.F.R. 1.63)
DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

INTER-SYSTEM HANDOVER – GENERIC HANDOVER MECHANISM

the specification of which (check applicable box(es)):

☐ is attached hereto
☒ was filed on April 6, 1999 as U.S. Application Serial No. 09/286,471 (Atty Dkt. No. 2380-122)
☐ was filed as PCT international application No. _____ on _____
 and (if applicable to U.S. or PCT application) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed or, if no priority is claimed, before the filing date of this application:

Priority Foreign Application(s):

Application Number	Country	Day/Month/Year Filed
--------------------	---------	----------------------

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

Application Number	Date/Month/Year Filed
--------------------	-----------------------

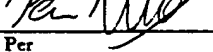
I hereby claim the benefit under 35 U.S.C. 120/365 of all prior United States and PCT international applications listed above or below and, insofar as the subject matter of each of the claims of this application is not disclosed in such prior applications in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. 1.56 which occurred between the filing date of the prior applications and the national or PCT international filing date of this application:

Prior U.S./PCT Application(s):

Application Serial No.	Day/Month/Year Filed
------------------------	----------------------

Status: patented
pending, abandoned

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon. And I hereby appoint NIXON & VANDERHYE P.C., 1100 North Glebe Rd., 8th Floor, Arlington, VA 22201-4714, telephone number (703) 816-4000 (to whom all communications are to be directed), and the following attorneys thereof (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent: Arthur R. Crawford, 25327; Larry S. Nixon, 25640; Robert A. Vanderhye, 27076; James T. Hosmer, 30184; Robert W. Faris, 31352; Richard G. Besha, 22770; Mark E. Nusbaum, 32348; Michael J. Keenan, 32106; Bryan H. Davidson, 30251; Stanley C. Spooner, 27393; Leonard C. Mitchard, 29009; Duane M. Byers, 33363; Jeffrey H. Nelson, 30481; John R. Lastova, 33149; H. Warren Burnam, Jr. 29366; Thomas E. Byrne, 32205; Mary J. Wilson, 32955; J. Scott Davidson, 33489; Alan M. Kagen, 36178; William J. Griffin, 31260; Robert A. Molan, 29834; B. J. Sadoff, 36663; James D. Berquist, 34776; Updeep S. Gill, 37334; Michael J. Shea, 34725; Donald L. Jackson, 41090; Michelle N. Lester, 32331."

1.	Inventor's Signature: Inventor:	 Per (first) MI WILLARS (last) (state/country) Sweden Residence: (city) Stockholm Post Office Address: Rindögatan 19, Stockholm, Sweden (Zip Code) SE-115 36	Date: MAY 28, 1999	Sweden (citizenship)
2.	Inventor's Signature: Inventor:	Mats (first) MI STILLE (last) (state/country) Sweden Residence: (city) Stockholm Post Office Address: Asögatan 116, Stockholm, Sweden (Zip Code) SE-116 24	Date:	Sweden (citizenship)
3.	Inventor's Signature: Inventor:	X Göran (first) MI RUNE (last) (state/country) Sweden Residence: (city) Linköping Post Office Address: Sandgårdsgatan 5A, Linköping, Sweden (Zip Code) SE-58252	Date: x May 19, 1999	Sweden (citizenship)

RULE 63 (37 C.F.R. 1.63)
DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

INTER-SYSTEM HANDOVER – GENERIC HANDOVER MECHANISM

the specification of which (check applicable box(es)):

☐ is attached hereto
☒ was filed on April 6, 1999 as U.S. Application Serial No. 09/286,471 (Atty Dkt. No. 2380-122)
☐ was filed as PCT International application No. _____ on _____
 and (if applicable to U.S. or PCT application) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed or, if no priority is claimed, before the filing date of this application:

Priority Foreign Application(s):

Application Number _____ Country _____ Day/Month/Year Filed _____

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

Application Number _____ Date/Month/Year Filed _____

I hereby claim the benefit under 35 U.S.C. 120/365 of all prior United States and PCT international applications listed above or below and, insofar as the subject matter of each of the claims of this application is not disclosed in such prior applications in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. 1.56 which occurred between the filing date of the prior applications and the national or PCT international filing date of this application:

Prior U.S./PCT Application(s):

Application Serial No. _____ Day/Month/Year Filed _____ Status: patented
 pending, abandoned

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon. And I hereby appoint NIXON & VANDERHYE P.C., 1100 North Glebe Rd., 8th Floor, Arlington, VA 22201-4714, telephone number (703) 816-4000 (to whom all communications are to be directed), and the following attorneys thereof (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent: Arthur R. Crawford, 25327; Larry S. Nixon, 25640; Robert A. Vanderhye, 27076; James T. Hosmer, 30184; Robert W. Faris, 31352; Richard G. Besha, 22770; Mark E. Nusbaum, 32348; Michael J. Keenan, 32106; Bryan H. Davidson, 30251; Stanley C. Spooner, 27393; Leonard C. Mitchard, 29009; Duane M. Byers, 33363; Jeffry H. Nelson, 30481; John R. Lastova, 33149; H. Warren Burnam, Jr. 29366; Thomas E. Byrne, 32205; Mary J. Wilson, 32955; J. Scott Davidson, 33489; Alan M. Kagen, 36178; William J. Griffin, 31260; Robert A. Molan, 29834; B. J. Sadoff, 36663; James D. Berquist, 34776; Updeep S. Gill, 37334; Michael J. Shea, 34725; Donald L. Jackson, 41090; Michelle N. Lester, 32331.*

1. Inventor's Signature: X Per WILLARS Date: X
 Inventor: (first) MI (last) Sweden
 Residence: (city) Stockholm (state/country) Sweden (citizenship)
 Post Office Address: Rindögatan 19, Stockholm, Sweden
 (Zip Code) SE-115 36
2. Inventor's Signature: X Mats STILLE Date: X 990531
 Inventor: (first) MI (last) Sweden
 Residence: (city) Stockholm (state/country) Sweden (citizenship)
 Post Office Address: Asögatan 116, Stockholm, Sweden
 (Zip Code) SE-116 24
3. Inventor's Signature: _____ Date: _____
 Inventor: Göran RUNE
 (first) MI (last) Sweden
 Residence: (city) Linköping (state/country) Sweden (citizenship)
 Post Office Address: Sandgårdsgatan 5A, Linköping, Sweden
 (Zip Code) SE-58252



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO./TITLE
09/286,471	04/06/99	WILLARS	P 2380-122

NIXON & VANDERHYE
1100 NORTH GLEBE ROAD
8TH FLOOR
ARLINGTON VA 22201

0242/0428-122

NOT ASSIGNED

2744

DATE MAILED:

04/28/99

NOTICE TO FILE MISSING PARTS OF APPLICATION
Filing Date Granted

An Application Number and Filing Date have been assigned to this application. The items indicated below, however, are missing. Applicant is given TWO MONTHS FROM THE DATE OF THIS NOTICE within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). If any of items 1 or 3 through 5 are indicated as missing, the SURCHARGE set forth in 37 CFR 1.16(e) of ☐ \$65.00 for a small entity in compliance with 37 CFR 1.27, or ☒ \$130.00 for a non-small entity, must also be timely submitted in reply to this NOTICE to avoid abandonment.

If all required items on this form are filed within the period set above, the total amount owed by applicant as a ☐ small entity (statement filed) ☒ non-small entity is \$ 778.00.

☒ 1. The statutory basic filing fee is:

- ☒ missing.
☐ insufficient.

Applicant must submit \$ 760 to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).

☒ 2. The following additional claims fees are due:

\$ 108 for 6 total claims over 20.

\$ _____ for _____ independent claims over 3.

\$ _____ for multiple dependent claim surcharge.

Applicant must either submit the additional claim fees or cancel additional claims for which fees are due.

☒ 3. The oath or declaration:

- ☒ is missing or unsigned.
☐ does not cover the newly submitted items.

An oath or declaration in compliance with 37 CFR 1.63, including residence information and identifying the application by the above Application Number and Filing Date is required.

☐ 4. The signature(s) to the oath or declaration is/are by a person other than inventor or person qualified under 37 CFR 1.42, 1.43 or 1.47.

A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.

☐ 5. The signature of the following joint inventor(s) is missing from the oath or declaration:

An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.

☐ 6. A \$50.00 processing fee is required since your check was returned without payment (37 CFR 1.21(m)).

☐ 7. Your filing receipt was mailed in error because your check was returned without payment.

☐ 8. The application was filed in a language other than English.

Applicant must file a verified English translation of the application, the \$130.00 set forth in 37 CFR 1.17(k), unless previously submitted, and a statement that the translation is accurate (37 CFR 1.52(d)).

☐ 9. OTHER:

Direct the reply and any questions about this notice to "Attention: Box Missing Parts."

A copy of this notice MUST be returned with the reply.

W. Newton
Customer Service Center
Initial Patent Examination Division (703) 308-1202

RECORDATION FORM COVER SHEET

PATENTS ONLY

Our Ref.: 2380-122

Commissioner of Patents and Trademarks
Box Assignment, Washington, D.C. 20231

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

<p>1. Name of conveying party(ies): Per WILLARS Mats STILLE Göran RUNE</p> <p>Additional name/s of conveying party/ies attached? <input type="checkbox"/></p> <p>3. Nature of conveyance: <input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Assignment <input type="checkbox"/> Change of Name <input type="checkbox"/> Other</p> <p>Execution Date: Inventor # 1: May 28, 1999 Inventor # 2: May 31, 1999 Inventor # 3: May 19, 1999</p>	<p>2. Name and address of receiving party(ies):</p> <p>Name: <u>Telefonaktiebolaget LM Ericsson</u> Internal Address: _____ Street Address: <u>S-126 25</u> _____ _____ City: <u>Stockholm</u> State/Country: <u>Sweden</u> Zip: _____</p> <p>Additional name/s & address/es attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
---	--

4. Application number(s) or patent number(s):
If this document is being filed together with a new application, the execution date of the application is: _____

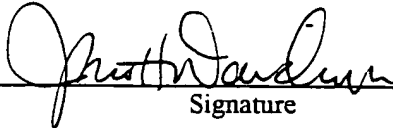
<p>A. Patent Application No(s). (1) 09/286,471 filed April 6, 1999 (2) (3)</p>	<p>B. (1) (2) (3)</p>
--	-----------------------------------

Additional numbers attached ☐ Yes ☒ No

<p>5. Name and address of party to whom correspondence concerning document should be mailed:</p> <p>Name: <u>J. Scott Davidson</u> Internal Address: _____ Street Address: <u>Nixon & Vanderhye P.C.</u> <u>1100 North Glebe Road</u> <u>8th Floor</u> City: <u>Arlington</u> State: <u>VA</u> Zip: <u>22201</u></p>	<p>6. Total number of applications & patents involved: <u>1</u></p> <p>7. Total fee (37 CFR 3.41) \$ <u>40.00</u> <input checked="" type="checkbox"/> Enclosed <input type="checkbox"/> Authorized to be charged to deposit account #14-1140</p> <p>8. The Commissioner is hereby authorized to charge any <u>deficiency</u> in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper thereafter filed in this application by this firm) to our Account No. <u>14-1140</u>.</p>
---	--

DO NOT USE THIS SPACE

9. Statements and signature.
To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

<u>J. Scott Davidson</u> Name of Person Signing Reg. No. 33,489	 Signature	<u>June 9, 1999</u> Date
---	--	-----------------------------

Total number of pages including **original** cover sheet, attachments, and document: [4]

ASSIGNMENT

WHEREAS, Per WILLARS; Mats STILLE and Göran RUNE; (hereinafter ASSIGNORS) of Stockholm, Sweden; Stockholm, Sweden and Linköping, Sweden; respectively, have invented a certain improvement in **INTER-SYSTEM HANDOVER -- GENERIC HANDOVER MECHANISM** for which a so-entitled application for Letters Patent of the United States was filed in the United States Patent and Trademark Office on **April 6, 1999** under Serial No. **09/286,471**;

WHEREAS, Telefonaktiebolaget LM Ericsson (hereinafter ASSIGNEE), a corporation of the Country of Sweden, having an office and place of business at **S-126 25, Stockholm, Sweden**, is desirous of acquiring an interest therein;

NOW, THEREFORE, in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the ASSIGNORS by these presents hereby sell, assign, and transfer unto the ASSIGNEE, its successors, assigns, and legal representatives, the aforesaid application(s) and the full and exclusive right to the invention and improvements therein in the United States and all foreign countries, as described in the aforesaid application, together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any Letters Patent or Patents claiming priority or resulting from the aforesaid application to ASSIGNEE, for its interest as ASSIGNEE, for the sole use and behoof of ASSIGNEE, its successors, assigns, and legal representatives.

ASSIGNORS hereby agree to assist in the preparation of and hereby assign a like interest to said ASSIGNEE, its successors, assigns, and legal representatives, without further remuneration, any continuation, divisional, reissue, or foreign application claiming priority from the aforesaid application or otherwise growing out of or related to the invention; and to execute any papers by ASSIGNEE, its successors, assigns, and legal representatives necessary to ASSIGNEE's full protection and title in and to the invention hereby transferred.

ASSIGNORS specifically agree, upon request of ASSIGNEE, and without further remuneration, to execute any and all papers desired by ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in ASSIGNEE.

AGREED and executed as noted below:

28 MAY 1999

Date

Witnessed by:

Francis Vanbussel

Name:

Per WILLARS

Per WILLARS

28 MAY 1999

Date:

x 990531
Date

Witnessed by:

x Francis Kinsbush
Name:

Date
Witnessed by:

Name:

x 
Mats STILLE

x 990531
Date:

Göran RUNE

Date:

_____ Date

Witnessed by:

J
Name: _____

x May 19, 1999
Date: _____

Witnessed by:

x Jens Pettersen
Name: _____

_____ Mats STILLE

Date: _____

x Göran Rune
Göran RUNE

x 1999-05-19
Date: _____



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

123
JSD
AUGUST 12, 1999

PTAS

NIXON & VANDERHYE P.C.
J. SCOTT DAVIDSON
1100 NORTH GLEBE ROAD, 8TH FLOOR
ARLINGTON, VA 22201



101067653A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 06/09/1999

REEL/FRAME: 010013/0473
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
WILLARS, PER

DOC DATE: 05/28/1999

ASSIGNOR:
STILLE, MATS

DOC DATE: 05/31/1999

ASSIGNOR:
RUNE, GORAN

DOC DATE: 05/19/1999

ASSIGNEE:
TELEFONAKTIEBOLAGET LM ERICSSON
S-126 25
STOCKHOLM, SWEDEN

SERIAL NUMBER: 09286471
PATENT NUMBER:

FILING DATE: 04/06/1999
ISSUE DATE:

STEVEN POST, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS



RECORD

06-15-1999



101067653

Our Ref.: 2380-122

NEO 6.9.99

Commissioner of Patents and Trademarks
Box Assignment, Washington, D.C. 20231

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Per WILLARS
Mats STILLE
Göran RUNE

2. Name and address of receiving party(ies):

Name: Telefonaktiebolaget LM Ericsson

Internal Address: _____

Street Address: S-126 25

Additional name/s of conveying party/ies attached? ☐

3. Nature of conveyance:

- ☒ Assignment ☐ Merger
☐ Security Assignment ☐ Change of Name
☐ Other _____

City: Stockholm

State/Country: Sweden

Zip: _____

Execution Date: Inventor # 1: May 28, 1999
 Inventor # 2: May 31, 1999
 Inventor # 3: May 19, 1999

Additional name/s & address/es attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: _____

A. Patent Application No(s).

(1) 09/286,471 filed April 6, 1999
 (2)
 (3)

B.

(1)
 (2)
 (3)

Additional numbers attached ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: J. Scott Davidson

Internal Address: _____

Street Address: Nixon & Vanderhye P.C.

1100 North Glebe Road

8th Floor

City: Arlington State: VA Zip: 22201

6. Total number of applications & patents involved: 1

7. Total fee (37 CFR 3.41)

\$ 40.00

☒ Enclosed☐ Authorized to be charged to deposit account #14-1140

8. The Commissioner is hereby authorized to charge any deficiency in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper thereafter filed in this application by this firm) to our Account No. 14-1140.

DO NOT USE THIS SPACE

9. Statements and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

J. Scott Davidson

Name of Person Signing
 Reg. No. 33,489

Signature

June 9, 1999

Date

Total number of pages including original cover sheet, attachments, and document: [4]

ASSIGNMENT

WHEREAS, Per WILLARS; Mats STILLE and Göran RUNE; (hereinafter ASSIGNORS) of Stockholm, Sweden; Stockholm, Sweden and Linköping, Sweden; respectively, have invented a certain improvement in **INTER-SYSTEM HANDOVER -- GENERIC HANDOVER MECHANISM** for which a so-entitled application for Letters Patent of the United States was filed in the United States Patent and Trademark Office on April 6, 1999 under Serial No. 09/286,471;

WHEREAS, Telefonaktiebolaget LM Ericsson (hereinafter ASSIGNEE), a corporation of the Country of Sweden, having an office and place of business at S-126 25, Stockholm, Sweden, is desirous of acquiring an interest therein;

NOW, THEREFORE, in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the ASSIGNORS by these presents hereby sell, assign, and transfer unto the ASSIGNEE, its successors, assigns, and legal representatives, the aforesaid application(s) and the full and exclusive right to the invention and improvements therein in the United States and all foreign countries, as described in the aforesaid application, together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any Letters Patent or Patents claiming priority or resulting from the aforesaid application to ASSIGNEE, for its interest as ASSIGNEE, for the sole use and behoof of ASSIGNEE, its successors, assigns, and legal representatives.

ASSIGNORS hereby agree to assist in the preparation of and hereby assign a like interest to said ASSIGNEE, its successors, assigns, and legal representatives, without further remuneration, any continuation, divisional, reissue, or foreign application claiming priority from the aforesaid application or otherwise growing out of or related to the invention; and to execute any papers by ASSIGNEE, its successors, assigns, and legal representatives necessary to ASSIGNEE's full protection and title in and to the invention hereby transferred.

ASSIGNORS specifically agree, upon request of ASSIGNEE, and without further remuneration, to execute any and all papers desired by ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in ASSIGNEE.

AGREED and executed as noted below:

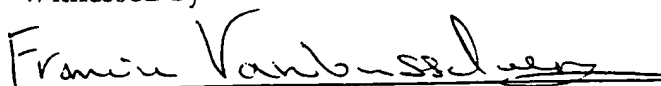
28 MAY 1999

Date



Per WILLARS

Witnessed by:



Name:

28 MAY 1999

Date:

x 990531
Date

Witnessed by:

x Francis Vanbussche
Name:

Date
Witnessed by:

Name:

x 
Mats STILLE

x 990531
Date:

Göran RUNE

Date:

Date

Witnessed by:

J
Name: _____

x May 19, 1999
Date: _____

Witnessed by:

x Jens Pettersen
Name: _____

Mats STILLE

Date: _____

x Göran Rune
Göran RUNE

x 1999-05-19
Date: _____

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Atty Dkt. 2380-122
C#/M#

WILLARS et al.

Group Art Unit: 2744

Serial No. 09/286,471

Examiner: Unassigned

Filed: April 6, 1999

Title: INTER-SYSTEM HANDOVER -- GENERIC
HANDOVER MECHANISMS

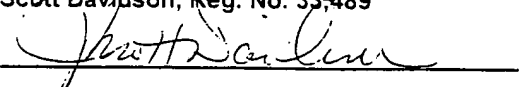
Date: December 10, 1999

Honorable Commissioner of Patents
and Trademarks
Washington, DC 20231

Sir:

INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 C.F.R. 1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. One copy of the reference(s) is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein, and appear among the "References Cited" on any patent to issue therefrom.

- ☒ This Information Disclosure Statement ("IDS") is being filed within three (3) months of the U.S. filing date OR before the mailing date of a first Office Action on the merits. No certification or fee is required.
- ☐ This IDS is being filed more than three (3) months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection or Notice of Allowance.
- ☐ a. I hereby certify that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to the filing of this IDS. 37 C.F.R. 1.97(e)(1).
- ☐ b. I hereby certify that no item of information in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three (3) months prior to the filing of this IDS. 37 C.F.R. 1.97(e)(2).
- ☐ c. Attached is our check no. _____ in the amount of \$230.00 in payment of the fee under 37 C.F.R. 1.17(p). Please credit or debit Dep. Acct. No. 14-1140 as needed to ensure consideration of the disclosed information. A duplicate copy of this paper is attached.
- ☐ This IDS is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Applicant(s) hereby petition(s) that the IDS be considered. Attached is our check in the amount of \$130.00 to cover payment of the petition fee under 37 C.F.R. 1.17(i)(1). Please credit or debit Deposit Account No. 14-1140 as needed to ensure consideration of the disclosed information. A duplicate copy of this paper is attached.
- ☐ a. I hereby certify that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to the filing of this IDS. 37 C.F.R. 1.97(e)(1).
- ☐ b. I hereby certify that no item of information in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three (3) months prior to the filing of this IDS. 37 C.F.R. 1.97(e)(2).
- ☐ Relevance of the non-English language reference(s) is discussed in the present specification.
- ☐ The reference(s) was/were cited in a counterpart foreign application. An English language version of the foreign search report is attached for the Examiner's information.
- ☐ A concise explanation of the relevance of the non-English language reference(s) appears in the Appendix hereto.
- ☐ The Examiner's attention is directed to co-pending U.S. Patent Application No. _____, filed _____, which is directed to related technical subject matter. The identification of this U.S. Patent Application is not to be construed as a waiver of secrecy as to that application now or upon issuance of the present application as a patent. The Examiner is respectfully requested to consider the cited application and the art cited therein during examination.
- ☐ Copies of the references were cited by or submitted to the Office in parent Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. 120. Thus, Form PTO 1449 is attached without copies of these references. 37 C.F.R. 1.98(d).
- ☒ Other. REFERENCES CITED DURING EPO STANDARD SEARCH
1100 North Glebe Road, 8th Floor
Arlington, Virginia 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100
JSD:twg
- NIXON & VANDERHYE P.C.
By Atty: J. Scott Davidson, Reg. No. 33,489
Signature: 

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Atty Dkt. 2380-122

WILLARS et al.

C# M#
Group Art Unit: 2744

Serial No. 09/286,471

Examiner: Not Yet Assigned

Filed: April 6, 1999

Date: January 4, 2001

Title: INTER-SYSTEM HANDOVER -- GENERIC HANDOVER MECHANISM

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

SUPPLEMENTAL DECLARATION AND POWER OF ATTORNEY

This is a Supplemental Declaration and Power of Attorney in the above-identified application and includes an attachment which is hereby incorporated by reference and the signature below serves as the signature to the attachment in the absence of any other signature thereon.

Fees are attached as calculated below:

Total effective claims after amendment 26 minus highest number
previously paid for 26 (at least 20) = 0 x \$ 18.00 \$ 0.00

Independent claims after amendment 3 minus highest number
previously paid for 3 (at least 3) = 0 x \$ 80.00 \$ 0.00

If proper multiple dependent claims now added for first time, add \$270.00 (ignore improper) \$ 0.00

Petition is hereby made to extend the current due date so as to cover the filing date of this
paper and attachment(s) (\$110.00/1 month; \$390.00/2 months; \$890.00/3 months) \$ 0.00

Terminal disclaimer enclosed, add \$ 110.00 \$ 0.00

☐ First/second submission after Final Rejection pursuant to 37 CFR 1.129(a) (\$710.00) \$ 0.00
☐ Please enter the previously unentered , filed
☐ Submission attached

☐ Request for Continued Examination pursuant to 37 C.F.R. § 1.114 (\$710.00) \$ 0.00
☐ Please enter the previously unentered , filed
or ☐ Required submission attached

Subtotal \$ 0.00

If "small entity," then enter half (1/2) of subtotal and subtract -\$ 0.00
☐ This application is entitled to "Small entity" status. ☐ "Small entity" statement attached. -

Rule 56 Information Disclosure Statement Filing Fee (\$180.00) \$ 0.00

Assignment Recording Fee (\$40.00) \$ 0.00

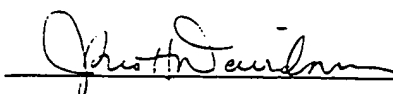
Other: 0.00

TOTAL FEE ENCLOSED \$ 0.00

The Commissioner is hereby authorized to charge any deficiency in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140. A duplicate copy of this sheet is attached.

1100 North Glebe Road, 8th Floor
Arlington, Virginia 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100
JSD:twg

NIXON & VANDERHYE P.C.
By Atty: J. Scott Davidson, Reg. No. 33,489

Signature: 

RULE 63 (37 C.F.R. 1.63)
INVENTORS DECLARATION FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

INTER-SYSTEM HANDOVER -- GENERIC HANDOVER MECHANISM

the specification of which (check applicable box(es)):

☐ is attached hereto
☒ was filed on April 6, 1999 as U.S. Application Serial No. 09/286,471 (Atty Dkt. No. 2380-122)
☐ was filed as PCT International application No. _____ on _____
And (if applicable to U.S. or PCT application) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed or, if no priority is claimed, before the filing date of this application:

Priority Foreign Application(s):

Application Number	Country	Day/Month/Year Filed
--------------------	---------	----------------------

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

Application Number	Date/Month/Year Filed
--------------------	-----------------------

I hereby claim the benefit under 35 U.S.C. 120/365 of all prior United States and PCT international applications listed above or below and, insofar as the subject matter of each of the claims of this application is not disclosed in such prior applications in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. 1.56 which occurred between the filing date of the prior applications and the national or PCT international filing date of this application:

Prior U.S./PCT Application(s):

Application Serial No.	Day/Month/Year Filed	Status: patented pending, abandoned
------------------------	----------------------	--

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon. And on behalf of the owner(s) hereof, I hereby appoint NIXON & VANDERHYE P.C., 1100 North Glebe Rd., 8th Floor, Arlington, VA 22201-4714, telephone number (703) 816-4000 (to whom all communications are to be directed), and the following attorneys thereof (of the same address) individually and collectively owner's/owners' attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent: Arthur R. Crawford, 25327; Larry S. Nixon, 25640; Robert A. Vanderhye, 27076; James T. Hosmer, 30184; Robert W. Faris, 31352; Richard G. Besha, 22770; Mark E. Nusbaum, 32348; Michael J. Keenan, 32106; Bryan H. Davidson, 30251; Stanley C. Spooner, 27393; Leonard C. Mitchard, 29009; Duane M. Byers, 33363; Jeffrey H. Nelson, 30481; John R. Lastova, 33149; H. Warren Burnam, Jr. 29366; Thomas E. Byrne, 32205; Mary J. Wilson, 32955; J. Scott Davidson, 33489; Alan M. Kagen, 36178; Robert A. Molan, 29834; B. J. Sadoff, 36663; James D. Berquist, 34776; Updeep S. Gill, 37334; Michael J. Shea, 34725; Donald L. Jackson, 41090; Michelle N. Lester, 32331; Frank P. Presta, 19828; Joseph S. Presta, 35329; Joseph A. Rhoa, 37515; Raymond Y. Mah, 41426. I also authorize Nixon & Vanderhye to delete any attorney names/numbers no longer with the firm and to act and rely solely on instructions directly communicated from the person, assignee, attorney, firm, or other organization sending instructions to Nixon & Vanderhye on behalf of the owner(s).

1.	Inventor's Signature: <u>[Signature]</u>	Date: <u>30-NOV-2000</u>
	Inventor: <u>Per</u> (first) <u>MI</u> <u>WILLARS</u> (last) <u>Sweden</u> (citizenship)	
	Residence: (city) <u>Stockholm</u> (state/country) <u>Sweden</u>	
	Post Office Address: <u>Rindögatan 19, Stockholm, Sweden</u>	
	(Zip Code) <u>SE-115 36</u>	
2.	Inventor's Signature: <u>[Signature]</u>	Date: <u>6-DEC-2000</u>
	Inventor: <u>Mats</u> (first) <u>MI</u> <u>STILLE</u> (last) <u>Sweden</u> (citizenship)	
	Residence: (city) <u>Stockholm</u> (state/country) <u>Sweden</u>	
	Post Office Address: <u>Asögatan 116, Stockholm, Sweden</u>	
	(Zip Code) <u>SE-116 24 +3</u>	
3.	Inventor's Signature: <u>[Signature]</u>	Date: <u>12-DEC-2000</u>
	Inventor: <u>Göran</u> (first) <u>MI</u> <u>RUNE</u> (last) <u>Sweden</u> (citizenship)	
	Residence: (city) <u>Linköping</u> (state/country) <u>Sweden</u>	
	Post Office Address: <u>Sandgårdsgatan 5A, Linköping, Sweden</u>	
	(Zip Code) <u>SE-58252</u>	

FOR ADDITIONAL INVENTORS, check box ☐ and attach sheet with same information and signature and date for each.

Serial No.: 09/286,471 Atty: J. Scott Davidson
Inventor/s: WILLARS et al. Date: Jan. 4, 01
C#/M#: 2380-122

Title: INTER-SYSTEM HANDOVER -- GENERIC
HANDOVER MECHANISM

Amendment
Pages Specification, Claims & Abstract
Claims
Sheets of Drawings
Declaration (Pages)
Assignment (Pages) Including Cover
Priority Document(s)
Base Issue Fee Transmittal
Fee (Check)

\$~0~

Other: **Supplemental Declaration and Power of Attorney**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

WILLARS et al.

Atty. Ref.: 2380-122

Serial No. 09/286,471

Group: 2744

Filed: April 6, 1999

Examiner: Not Yet Assigned

For: INTER-SYSTEM HANDOVER --
GENERIC HANDOVER MECHANISM

* * * * *

October 8, 2001

Assistant Commissioner for Patents
Washington, DC 20231


Sir:

STATUS INQUIRY

An application was filed on April 6, 1999. However, since then applicant has not received any Official Action from the Patent Office regarding the application. Inquiry is made as to when an Action will be forthcoming.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 
J. Scott Davidson
Reg. No. 33,489

JSD:twg
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

550
2380-122



STATUS LETTER REPLY



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Washington, D.C. 20231

Serial Number: 09/286,471

Group Art Unit: 2681

Filing Date: 4/6/99

Attorney Reference: 2380-122

REQUESTER: J. Scott Davidson

☒ Attorney of Record

- ☐ Not of Record. Therefore, the following status information is being released to the following ATTORNEY OF RECORD: _____
- ☐ Not of Record. Unfortunately, the status information can not be released because the requestor is not of record. If the requester should be of record, please forward additional changes to the Power of Attorney to the Customer Service Office.

STATUS INFORMATION

☒ Action by the examiner
Expected date for action on this application
Month: 11 Year: 01

☐ Other (explain) _____

Lina Myers

Customer Service Office
Technology Center 2600
(703) 306-0377 (voice)
(703) 872-9313 (fax)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

WILLARS et al.

Atty. Ref.: 2380-122

Serial No. 09/286,471

Group: 2681

Filed: April 6, 1999

Examiner: Not Yet Assigned

For: INTER-SYSTEM HANDOVER --
GENERIC HANDOVER MECHANISM

* * * * *

October 8, 2002

Assistant Commissioner for Patents
Washington, DC 20231

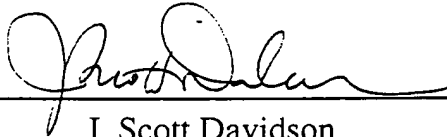
Sir:

SECOND STATUS INQUIRY

An application was filed on April 6, 1999. A Status Inquiry was filed on October 8, 2001 and a response from the Patent Office was received stating that "an expected date for action should be approximately November 2001." However, since then applicant has not received any Official Action from the Patent Office regarding the application. A Second Inquiry is made as to when an Action will be forthcoming.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 

J. Scott Davidson

Reg. No. 33,489

JSD:twg
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

JSO
2380-122



United States Patent And Trademark Office

Commissioner For Patents

United States Patent And Trademark Office

Washington, D.C. 2023

www.uspto.gov

Date: 11/21/02

NIXON & VANDERHYE
1100 NORTH GLEBE ROAD
8TH FLOOR
ARLINGTON VA 22201

To: Applicant of Serial Number 09286471

We project that this application will be first examined in 0 to 3 months from today.

Customer Service Office in Technology Center: 2600

Phone Number: 703-306-0377

FAX Number: 703-872-9314

Applicant/Attorney Contact Information:

Telephone: No Telephone #

Fax: No Fax #

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

WILLARS et al.

Atty. Ref.: 2380-122

Serial No. 09/286,471

TC/A.U.: 2681

Filed: April 6, 1999

Examiner: Not Yet Assigned

For: INTER-SYSTEM HANDOVER --
GENERIC HANDOVER MECHANISM

* * * * *

October 6, 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

THIRD STATUS INQUIRY

An application was filed on April 6, 1999. A Status Inquiry was filed on October 8, 2001 and a response from the Patent Office was received stating that "an expected date for action should be approximately November 2001." However, since then applicant has not received any Official Action from the Patent Office regarding the application. A Third Inquiry is made as to when an Action will be forthcoming.

WILLARS et al.
Serial No. 09/286,471

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____

A handwritten signature in dark ink, appearing to read "John R. Lastova", is written over a horizontal line.

John R. Lastova

Reg. No. 33,149

JRL:at
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100



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Transaction History

Date	Transaction Description
04-26-2006	Correspondence Address Change
04-08-2004	Duplicate case has been deactivated
04-08-2003	Case Docketed to Examiner in GAU
10-06-2000	Case Docketed to Examiner in GAU
12-10-1999	Information Disclosure Statement (IDS) Filed
04-06-1999	Information Disclosure Statement (IDS) Filed
07-30-1999	Case Docketed to Examiner in GAU
06-21-1999	Application Dispatched from OIPE
06-18-1999	Application Is Now Complete
04-28-1999	Notice Mailed--Application Incomplete--Filing Date
04-20-1999	IFW Scan & PACR Auto Security Review
04-12-1999	Initial Exam Team nn

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